

06/24/2003

# UTILITY PATENT APPLICATION TRANSMITTAL

Attorney Docket No.: S-100,543

First Inventor or Application Identifier: Donna L. Robinson

Title: IMPROVED METHODS FOR SEQUENCING GC-RICH AND  
CCT REPEAT DNA TEMPLATES

Express Mail Label No.: EJ425247037US

## APPLICATION ELEMENTS

ADDRESS TO: Commissioner for Patents  
Mail Stop Patent Application  
PO Box 1450  
Alexandria, VA 22313-1450

1. ☒ \* Fee Transmittal Form (e.g. PTO/SB/17)  
(submit an original and a duplicate for fee processing)
2. ☒ Applicant claims small entity status.  
See 37 CFR 1.27.
3. ☒ Specification [Total Pages: 39]  
☒ Descriptive title of the Invention  
☐ Cross References to Related Applications  
☒ Statement Regarding Fed sponsored R&D  
☒ Reference to sequence listing, a table  
or a computer program listing appendix  
☒ Background of the Invention  
☒ Brief Description of the Drawings (if filed)  
☒ Detailed Description  
☒ Claim(s)  
☒ Abstract of the Disclosure
4. ☒ Drawings(s) (35 U.S.C. 113) [Total Sheets: 12]  
☒ Formal ☐ Informal
5. ☒ Declaration & Power of Attorney  
[Total Pages: 2]  
a. ☒ Newly executed (original or copy)  
b. ☐ Copy from a prior application (37 C.F.R. § 63(d)  
(for continuation/divisional with Box 16 completed)  
c. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting  
inventor(s) named in the prior application,  
see 37 C.F.R. §§ 1.63(d)(2) and 1.33 (b).

6. ☐ CD-ROM or CD-R in duplicate, large table or  
Computer Program (Appendix)
7. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)  
a. ☒ Computer Readable Copy  
b. Specification Sequence Listing on:  
i. ☐ CD-ROM or CD-R (2 copies): or  
ii. ☒ paper  
c. ☒ Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

8. ☒ Assignment Papers (cover sheet & documentation)
9. ☐ 37 C.F.R. § 3.73(b) Statement ☐ Power of  
(when there is an assignee) Attorney
10. ☐ Information Disclosure ☐ Copies of IDS  
Statement (IDS)/PTO-1449 Citations
11. ☐ Preliminary Amendment
12. ☒ Return Receipt Postcard (MPEP 503)  
(should be specifically itemized)
13. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)
14. ☐ Nonpublication Request and Certification Under 35 U.S.C.  
122(b)(2)(b)(i)
15. ☒ Other: Transmittal, Petition

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application

Prior application information: Examiner: Group/Art Unit:

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 16. CORRESPONDENCE ADDRESS

☒ Customer Number OR ☐ Correspondence Address Below

35068

(Insert Customer No. or Attach Bar Code Label here)

Name: **Kenn th K. Sharples**  
Address: **Los Alamos National Laboratory, LC/IP, MS A187**  
City: **Los Alamos** State: **New Mexico** Zip Code: **87545**  
Country: **United States** Telephone: **(505) 667-0304** Fax: **(505) 665-4424**

Name: **Kenneth K. Sharples**

Registration No.: 35,355

Signature: 

Date: September 04, 2003

22278 U.S. PTO

10/656358

09/04/03

# FEE TRANSMITTAL

## For FY 2003

*Patent fees are subject to annual revision  
(submit an original and a duplicate for fee processing)*

Complete if Known

Application Number:	
Filing Date:	September 04, 2003
First Named Inventor:	Donna L. Robinson
Examiner Name:	
Group/Art Unit:	
Attorney Docket No.:	S-100,543

### METHOD OF PAYMENT

1. ☒ The commissioner is hereby authorized to charge indicated fees and credit any over payments to:  
 Deposit Account Number: **12-2150**  
 Deposit Account Name: Los Alamos National Laboratory  
☒ Charge Any Additional Fee Required Under 37 C.F.R. 1.16 and 1.17  
☒ Applicant claims small entity status. See 37 CFR 1.27

### FEE CALCULATION

#### 1. BASIC FILING FEE

Large Entity Fee	Small Entity Fee	Fee Description	Fee Paid
\$750	\$375	Utility filing fee	
\$750	\$375	Reissue filing fee	
\$160	\$80	Provisional filing fee	

**SUBTOTAL (1) \$375.00**

#### 2. EXTRA CLAIM FEES

Total Claims	10 - 20** =	Extra Claims	Fee from Fee Paid Below	Fee Paid
Independent Claims	3 - 3** =	X	=	-0-
Multiple Dependent			=	

\*\* or number previously paid, if greater; For Reissues, see below

Large Entity Fee	Small Entity Fee	Fee Description
\$18	\$9	Claims in excess of 20
\$84	\$42	Independent claims in excess of 3
\$280	\$140	Multiple dependent claim, if not paid.
\$84	\$42	** Reissue independent claims over original patent
\$18	\$9	** Reissue claims in excess of 20 and over original patent

**SUBTOTAL (2) \$-0-**

### FEE CALCULATION (continued)

#### 3. ADDITIONAL FEES

Large Entity Fee	Small Entity Fee	Fee Description	Fee Paid
\$130	\$65	Surcharge - late filing fee or oath	
\$50	\$25	Surcharge - late provisional filing fee or cover sheet	
\$2,520	\$2,520	For filing a request for reexamination	
\$110	\$55	Extension for reply within first month	
\$410	\$205	Extension for reply within second month	
\$930	\$465	Extension for reply within third month	
\$1,450	\$725	Extension for reply within fourth month	
\$1,970	\$985	Extension for reply within fifth month	
\$320	\$160	Notice of Appeal	
\$320	\$160	Filing a brief in support of an appeal	
\$280	\$140	Request for oral hearing	
\$110	\$55	Petition to revive - unavoidable	
\$110	\$55	Terminal Disclaimer	
\$1,300	\$650	Petition to revive - unintentional	
<b>\$130</b>	<b>\$130</b>	<b>Petitions to the Commissioner</b>	<b>\$130.00</b>
\$50	\$50	Petitions related to provisional applications	
\$180	\$180	Submission of Information Disclosure Statement	
\$750	\$375	Filing a submission after final rejection (37 CFR 1.129 (a))	
\$750	\$375	For each additional invention to be examined (37 CFR 1.129(b))	
\$100	\$100	Certificate of Correction	
\$300	\$300	Publication fee for early, voluntary, or normal publication	
\$750	\$375	Request for Continued Examination (RCE)	
Other fee (specify) _____			

**SUBTOTAL (3)**

**\$**

Reduced by Basic Filing Fee Paid

<b>SUBTOTAL FROM 1</b>	<b>\$375.00</b>
<b>SUBTOTAL FROM 2</b>	<b>\$-0-</b>
<b>SUBTOTAL FROM 3</b>	<b>\$130.00</b>
<b>TOTAL AMOUNT OF PAYMENT</b>	<b>\$505.00</b>

### SUBMITTED BY

Complete (if applicable)

Printed Name: Samuel L. Borkowsky

Reg. No. 42,346

Signature: *Samuel L. Borkowsky*

Date: 09/04/03

Telephone (505) 665-3111

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Donna L. Robinson

Docket No.: S-100,543

Serial No.:

Examiner:

Filed : September 04, 2003

Art Unit:

For : IMPROVED METHODS FOR SEQUENCING GC-RICH AND  
CCT REPEAT DNA TEMPLATES

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**TRANSMITTAL**

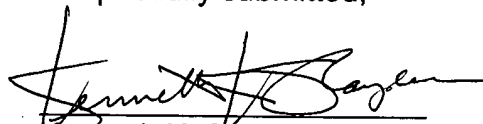
Transmitted with this mailing are the following documents for submission in the above-identified patent application:

1. Utility Patent Application Transmittal;
2. Fee Transmittal;
3. Patent Application;
4. Petition Under 37 CFR 1.84(a)(2);
5. Drawings;
6. Combined Declaration and Power of Attorney;
7. Submission of Sequence Listing, Computer Readable Copy, and/or Amendment Pertaining Thereto for Biotechnology Invention Containing Nucleotide and/or Amino Acid Sequence;
8. Sequence Listing;
9. Computer Readable Copy of Sequence Listing;

10. Recordation Form Cover Sheet; and
11. Assignment.

Respectfully submitted,

Date: September 04, 2003  
Reg. No. 35,355  
Phone: (505) 667-0304

A handwritten signature in black ink, appearing to read "Kenneth K. Sharples", written over a horizontal line.

Kenneth K. Sharples  
Los Alamos National Laboratory, LC/IP, MS A187  
Los Alamos, NM 87545

S-100,543

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Donna L. Robinson

Docket No.: S-100,543

Serial No.:

Examiner:

Filed : September 04, 2003

Art Unit:

For : IMPROVED METHODS FOR SEQUENCING GC-RICH AND  
CCT REPEAT DNA TEMPLATES

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

PETITION UNDER 37 CFR 1.84(a)(2)

Sir,

Pursuant to Rule 84(a)(2), Applicants hereby petition the Office to accept color drawings in the above-referenced patent application being filed concurrently herewith.

Three sets of color drawings and a black and white photocopy set are attached hereto.

The fee set forth in 37 CFR 1.17(h) is \$130.00.

---

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))

I hereby certify that this correspondence is, on the date shown below, being:

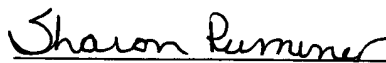
**MAILING**

☒ deposited with the United States Postal Service with sufficient postage as Express Mail, Label No. EJ425247037US in an envelope addressed to the: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450

**FACSIMILE**

☐ transmitted by facsimile to the Patent and Trademark Office

Date September 04, 2003

  
Signature

Sharon Ruminer  
(type or print name of person certifying)

09/10/2003 DENMANU1 00000055 122150 10656358

02 FC:1460 130. DA

Color drawings are necessary in this application for the following reasons. All of the drawings being submitted as part of this application are fluorogram traces generated by software specifically designed to render data from an automated DNA sequencing instrument, specifically ABI Prism Sequencing Analysis Software version 5.0 (Applied Biosystems Inc., Foster City, CA). These fluorogram traces present four different color waveforms corresponding to the four different nucleotide bases in DNA, each of which is labeled with a different color fluorescent dye, enabling the sequencing instrument to differentiate between them. The four waveforms are presented in overlapping format, making it very difficult for one to distinguish the different waveforms in a black and white form.

In addition to the waveforms, the software output includes a bar graph representation of a statistical parameter designed to assess the level of confidence attached to each nucleotide base in the sequence. These bar graphs are also rendered in the same four colors, each representing a different nucleotide base. Although a black and white rendering of these bar graphs enables one to see the relative level of confidence attached to a particular nucleotide base, it does not enable one to get a picture of the overall relative nucleotide base composition of the entire DNA being sequenced. Only a color rendering provides this additional and important level of information.

The specification of the application includes the language required under 37 CFR 1.84(a)(2)(iv).

Date: September 04, 2003  
Reg. No. 35,355  
Phone: (505) 667-0304

Respectfully submitted,



Kenneth K. Sharples  
Los Alamos National Laboratory,  
LC/IP, MS A187  
Los Alamos, NM 87545